

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NORTH CAROLINA
SOUTHERN DIVISION**

BRENT NIX, individually and on behalf)
of all others similarly situated,)

Plaintiff,)

v.)

THE CHEMOURS COMPANY FC, LLC,)
THE CHEMOURS COMPANY, E.I.)
DUPONT de NEMOURS AND)
COMPANY, INC., E.I. DUPONT)
CHEMICAL CORPORATION, ELLIS H.)
MCGAUGHY, and MICHAEL E.)
JOHNSON,)

Defendants.)

Case No.: 7:17-CV-00189-D

CAPE FEAR PUBLIC UTILITY)
AUTHORITY,)

Plaintiff,)

v.)

THE CHEMOURS COMPANY FC, LLC,)
and E.I. DU PONT de NEMOURS AND)
COMPANY,)

Defendants.)

Case No.: 7:17-CV-00195-D

ROGER MORTON, individually and on)
behalf of all others similarly situated,)

Plaintiff,)

v.)

THE CHEMOURS COMPANY FC, LLC,)
THE CHEMOURS COMPANY, E.I.)
DUPONT de NEMOURS AND)
COMPANY, INC., E.I. DUPONT)
CHEMICAL CORPORATION, ELLIS H.)

Case No.: 7:17-CV-00197-D

MCGAUGHY, and MICHAEL E. JOHNSON,
Defendants.

VICTORIA CAREY, individually and on behalf of all others similarly situated,
Plaintiff,

v.

E. I. DU PONT DE NEMOURS AND COMPANY and THE CHEMOURS COMPANY FC, LLC,
Defendants.

BRUNSWICK COUNTY,
Plaintiff,

v.

DOWDUPONT, INC., a Delaware corporation; E.I. DU PONT DE NEMOURS AND COMPANY, a business entity form unknown; THE CHEMOURS COMPANY, a Delaware corporation; THE CHEMOURS COMPANY FC, LLC, a Delaware limited liability company, and DOES 1 to 25,
Defendants.

Case No.: 7:17-CV-00201-D

Case No.: 7:17-CV-00209-D

NOTICE OF FILING IN ADVANCE OF STATUS CONFERENCE

COMES NOW Plaintiff Cape Fear Public Utility Authority (“CFPUA”), through counsel, to give notice to all parties that it hereby files with the Court the document attached hereto as Exhibit A in advance of the status conference scheduled for January 4, 2018.

The attached document is the most recent report issued by researchers at the University of North Carolina at Wilmington related to their efforts, in partnership with CFPUA, to identify perfluorinated compounds in the Cape Fear River. That project has been partially funded by an appropriation by the North Carolina General Assembly included in House Bill 56, Session Law 2017-209. The report is publicly available on CFPUA's website, at <http://www.cfpua.org/DocumentCenter/View/10199>, and constitutes a public record.

Dated: January 2, 2018

Respectfully submitted,

/s/ Joseph A. Ponzi

Joseph A. Ponzi

N.C. State Bar No. 36999

George W. House

N.C. State Bar No. 7426

William P.H. Cary

N.C. State Bar No. 7651

V. Randall Tinsley

N.C. State Bar No. 14429

**BROOKS, PIERCE, McLENDON
HUMPHREY & LEONARD, L.L.P.**

Post Office Box 26000

Greensboro, North Carolina 27420-6000

Telephone: (336) 373-8850

Facsimile: (336) 232-9114

jponzi@brookspierce.com

ghouse@brookspierce.com

wcary@brookspierce.com

rtinsley@brookspierce.com

Attorneys for Plaintiff Cape Fear Public Utility Authority

CERTIFICATE OF SERVICE

I hereby certify that on January 2, 2018, I electronically filed the foregoing NOTICE OF FILING IN ADVANCE OF STATUS CONFERENCE with the Clerk of the Court using the CM/ECF system which will send notification of such filing to all counsel of record who have made an appearance in the above-captioned cases.

Dated: January 2, 2018

/s/ Joseph A. Ponzi

Joseph A. Ponzi

N.C. State Bar No. 36999

**BROOKS, PIERCE, McLENDON
HUMPHREY & LEONARD, L.L.P.**

Post Office Box 26000

Greensboro, North Carolina 27420-6000

Telephone: (336) 373-8850

Facsimile: (336) 232-9114

jponzi@brookspierce.com

*Attorney for Plaintiff Cape Fear Public
Utility Authority*

EXHIBIT A

Cape Fear Public Utility Authority

Project update for the period covering November 1 – 30th, 2017

Abstract: Targeted screening for several per-flouroalkyl substances (PFAS) in raw and finished drinking revealed concentration ranging from not detected to 90 ng/L (parts-per trillion). Two compounds that have been tentatively identified as PFMOAA and PFO4DA were detected in the raw and finished water. The non-targeted screening also revealed several PFAS that have not been reported to the best of our knowledge.

Note, where an authentic standard is not available the concentrations must be considered semi-quantitative. When interpreting the molecular formulas generated by high-resolution mass spectrometry, caution is advised when considering health impacts, if any, until a complete structural elucidation can be performed and appropriate animal/health studies are performed.

We have begun weekly sampling and analysis of raw and finished water. The first set of raw and finished water was collected 11/15/17 and 11/16/17 respectively. These samples have been processed and analyzed. The second raw and finished was collected on 11/28/17 and 11/29/17 respectively and will be processed and analyzed in the next few days. Quantified targeted compounds in the raw and finished waters are presented in table 1 with concentrations of ng/L (parts per trillion). The non-targeted compounds can be considered semi-quantitative since no authentic standard is available. This is an important consideration given the different response factors for the unknown compounds versus GenX. The concentrations reported were determined using equation number 1:

Equation 1:
$$[Unknown] = [GenX] * \frac{Unknown\ peak\ area}{GenX\ peak\ area}$$

where:

[Unknown] is the concentration of non-targeted analyte in ng/L
[GenX] is the concentration of GenX in ng/L

A major component of the research is the non-targeted screening for other fluorinated organic compounds in the raw and finished water. Non-targeted screening requires a high resolution mass spectrometer to provide the mass resolution and subsequent mass accuracy to generate molecular formulas for unknown organic compounds. Figure 1 presents the extracted ion current of 462.9 m/z generated from the LC/QTOF for the same samples described above. In both samples there are five chromatographic peaks detected that represent newly discovered non-targeted compounds (Fig. 1). Molecular formulas generated for each of the compounds are presented in table 2 along with how well the generated molecular formula fits the observed accurate mass as indicated by the error. The closer to zero in error the greater confidence in the match of molecular formula to measured mass to charge ratio (m/z). The molecular formulas for peaks II and III are identical but are almost separated chromatographically suggesting they are isomeric compounds (same formula different arrangements of atoms in the two compounds). Compound IV is clearly resolved chromatographically from the other two compounds and has a different molecular formula. All of the molecular formulas contain similar elements and, in particular, three of them contain one atom of sulfur. Searching commercial databases that organize organic compounds by CAS number (e.g. SciFinder) for potential compounds that match these molecular formulas gave no matches. Interestingly, the elements in these molecular formulas are the same as nafion by-products 1 ($C_7HF_{13}O_5S$) and 2 ($C_7H_2F_{14}O_5S$). It is too early to say if these other compounds are related to nafion since the number of isomers that are possible from each of the molecular formulas are many. Therefore, caution is advised in comparing to the nafion by-products until further structure elucidation is performed. Further experiments

with multidimensional mass spectrometry is ongoing that will provide further fragments for structural elucidation.

No PFAS compounds were detected in the field blanks and laboratory blanks illustrating no contamination took place. Sample processing and QA/QC procedures were followed as described in Nakayama et al. (2010)¹ and Styrnar et al. (2015)².

Table 1: Concentrations in ng/L or parts per trillion of PFAS compounds detected in raw water (RW) and finished water (FW) collected 11/15/17 and 11/16/17 respectively. Targeted compounds were quantified against authentic standards while non-targeted were quantified against GenX calibration curve.

Compound	FW 1	RW1
<i>targeted</i>	n.d	n.d
PFMOPrA	80	90
PFMOBA	n.d.	n.d.
PFPrOPrA		
(GenX)	34	47
PFOA	n.d.	n.d.
PFOS	n.d.	n.d.
<i>non-targeted</i>		
PFMOAA	32	28
PFO2HxA	n.d.	n.d.
PFO3OA	n.d.	n.d.
PFO4DA	24	15

Table 2: Non-targeted peaks detected in both raw and finished water collected 11/15/17 and 11/16/17 respectively. The peak number refers to Figure 1.

RT ^a	Peak Number	Meas. m/z	Formula	Theo. m/z	err [ppm] ^b	err [mDa] ^c
12.4	I	526.95971	C 10 H F 18 O 4	526.95929	-0.8	-0.4
15.8	II	462.93157	C 10 F 13 O 4 S 1	462.93152	-0.1	-0.1
16	III	462.93122	C 10 F 13 O 4 S 1	462.93152	0.6	0.3
16.6	IV	420.99494	C 9 H 5 F 12 O 5	420.99509	0.3	0.1
17.2	V	506.95533	C 10 H 3 F 16 O 3 S 1	506.95529	-0.1	0

a= retention time in minutes

$$b= \text{mass accuracy (ppm)} = \frac{\text{measured} - \text{theoretical}}{\text{theoretical}} * 10^6$$

$$c= \text{mass accuracy (mDa)} = (\text{measured} - \text{theoretical}) * 10^3$$

1. Nakayama, S. F.; Strynar, M. J.; Reiner, J. L.; Delinsky, A. D.; Lindstrom, A. B., *Environ. Sci. Technol.* **2010**, *44*, 4103.
2. Strynar, M.; Dagnino, S.; McMahan, R.; Liang, S.; Lindstrom, A.; Andersen, E.; McMillan, L.; Thurman, M.; Ferrer, I.; Ball, C., Identification of Novel Perfluoroalkyl Ether Carboxylic Acids (PFECAs) and Sulfonic Acids (PFESAs) in Natural Waters Using Accurate Mass Time-of-Flight Mass Spectrometry (TOFMS). *Environmental Science & Technology* **2015**, *49* (19), 11622-11630.

Figure 1: Extracted ion chromatogram (462.9 m/z) non-targeted screening of PFAS compounds in raw and finished water collected 11/15/17 and 11/16/17 analyzed by LC/QTOF. Peak numbers refer to the numbers in table 2.

